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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,123	06/22/2001	John I. Garney	42390P11058	8260

8791 7590 01/05/2005

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EXAMINER	
LAMARRE, GUY J	
ART UNIT	**PAPER NUMBER**
2133	

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,123	GARNEY ET AL.	
	Examiner	Art Unit	
	Guy J. Lamarre, P.E.	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3, 6, 8-10, 12, 14-19, 21, 23--30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 6, 8-10, 12, 14-19, 21, 23--30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

FINAL OFFICE ACTION

0. This office action is in response to Applicants' Amendment of 02 July 2004.

0.1 **Claims 1, 10, 19, 25** are amended, **Claims 2, 4-5, 7, 11, 13, 20, 22** are cancelled. **Claims 1, 3, 6, 8-10, 12, 14-19, 21, 23-30** remain pending.

0.2 The prior art rejections and objections of record are maintained in response to Applicants' Amendments.

Response to Arguments

0.3 Applicants' arguments have been fully considered, but they are not found persuasive.

REMARKS

1. In response to **Claims 1, 3, 6, 8-10, 12, 14-19, 21, 23-30**, Applicants argue, on page 7 para. 4 et seq., that the prior art of record does not teach the claimed invention, i.e., nonvolatile destructive read memory location failure codeword '*wherein the failure codeword is chosen so that its mathematical distance from all correctable data patterns of the error correction code is greater than the minimum distance of the error correction code.*'

Examiner disagrees and notes that the prior art of record does disclose equivalent ECC comprising signal processing means wherein the failure codeword is made uncorrectable by placing such failure codeword outside the error correcting capability of the system error correction code. The only way for the uncorrectable failure codeword to be corrected would be to increase the minimum distance of the ECC, but for a given data system such error correction code is fixed based on parity/information size, as seen in **Gagliardo** at, e.g., *Table* of page 4 and page 3 line 18 et seq.

Thus prior art of record does disclose that the mathematical or Hamming distance of the failure codeword exceeds the error correcting capability of the system error correction code so as to prevent such ECC from even recognizing let alone attempting to correct such failure codeword.

It will also 'be recalled that so-called "channel" coding consists, when the "code words" sent to the receiver are formed, of introducing a certain degree of redundancy in the data to be transmitted. At the

receiver, the associated decoding method then judiciously uses this redundancy to detect any transmission errors and if possible to correct them. More precisely, the "Hamming distance" between two binary sequences of the same length is defined as the number of locations where the two sequences have a different binary element. The code words obey certain rules defined by the coding method in question, which enables the receiver to replace the word received with the "legal" code word situated at the shortest Hamming distance from this received word.

It is clear that this error correction procedure is more reliable, the greater the minimum Hamming distance between the various code words. It will be noted that the distance between a given code word and the "null" code word (the one where all the binary elements are zero) is equal to the number of binary elements equal to 1, called the "binary weight", of this given code word. It is deduced from this that, all other things being equal, the higher the minimum value of the binary weight of the code words (excluding the null word), the better the coding method.'

Examiner also notes that the prior art of record does not restrict digital computers exclusively to volatile memory system as in seen in page 2 lines 4-6.

Therefore, said claims are not distinguished over the prior art of record.

1.1 To the extent that the response to the applicant's arguments may have mentioned new portions of the prior art references which were not used in the prior office action, this does not constitute a new ground of rejection. It is clear that the prior art reference is of record and has been considered entirely by applicant. See *In re Boyer*, 363 F.2d 455, 458 n.2, 150 USPQ 441, 444, n.2 (CCPA 1966) and *In re Bush*, 296 F.2d 491, 496, 131 USPQ 263, 267 (CCPA 1961).

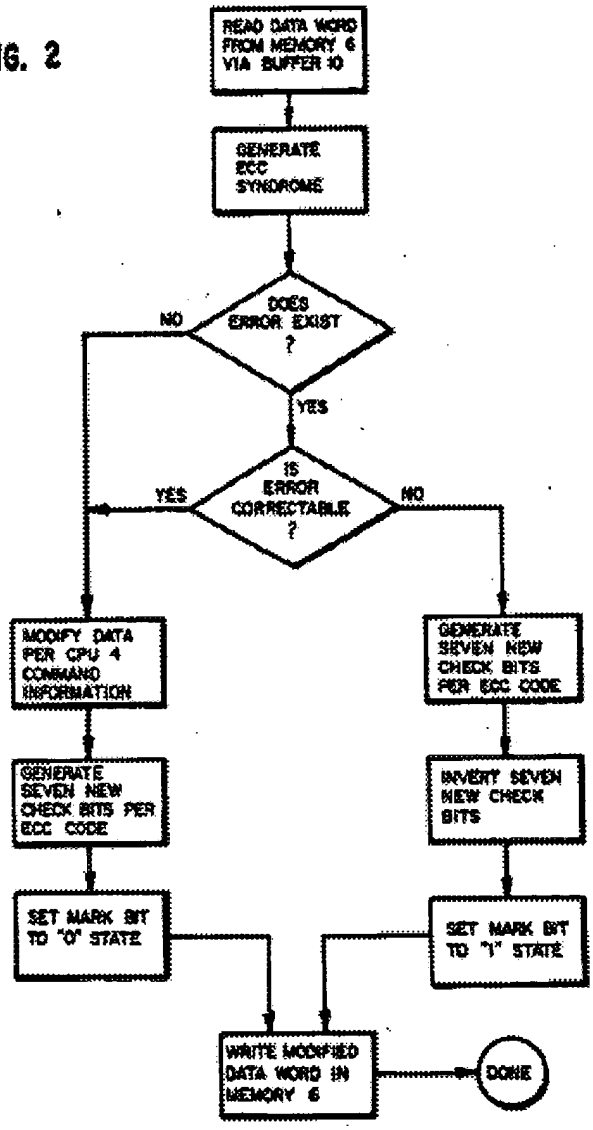
The mere fact that additional portions of the same reference may have been mentioned or relied upon does not constitute new ground of rejection. *In re Meinhardt*, 392, F.2d 273, 280, 157 USPQ 270, 275 (CCPA 1968).

Claim Rejections - 35 USC § 102

2. **Claims 1, 3, 6, 8-10, 12, 14-19, 21, 23-30** are rejected under 35 U.S.C. 102(b) as being anticipated by **Gagliardo** (EP Patent No. 0 381 885; issue date: 16 Aug. 1990).

As per Claims 1, 3, 6, 8-10, 12, 14-19, 21, 23-30, Gagliardo anticipates the claimed invention because Fig. 2 depicts, for a memory protection wherein bad/uncorrectable data access is prevented, means for:

FIG. 2



reading data from a memory location; determining if the data read is corrupt; and writing a failure codeword in the memory location if the data read is corrupt wherein the failure codeword is chosen so that it has a mathematical distance greater than all correctable data patterns, the failure codeword being chosen so that its mathematical distance from all correctable data

patterns of the error correction code is greater than the minimum distance of the error correction code (equivalent to generating new check bits followed by bit reversal thereof, and mark bit setting so as differentiate uncorrectable/corrupted data from error-free data wherein correctable data fall within the minimum distance of the ECC code and uncorrectable data fall outside or exceed the minimum distance of the ECC code so as to undergo no correction during transfer); wherein the data read is encoded by an error correction code via ECC syndrome means; wherein the data read includes coding bits which are utilized for error correction of the data via modifying means *per CPU 4 command information;* wherein determining if the data read is corrupt includes, decoding the data read based on an error correction code, e.g., via modifying means *per CPU 4 command information;* wherein determining if the data read is corrupt includes, determining if the data read is different from the data originally written to the memory location; and further comprising: writing the data to the memory location from where it was read if the data is not corrupt via *write modified data word in memory 6.*

Gagliardo discloses the claimed hardware/apparatus and software/machine-readable medium implementation means in Figs. 1-3 and related description.

Conclusion

3. THIS ACTION IS MADE FINAL. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

3.1 Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Customer Services, 220 20th Street S., Crystal Plaza II, Lobby, Room 1B03, Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (571) 272-3826. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached at (571) 272-3819.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3609.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Guy J. Lamarre, P.E
Primary Examiner
12/30/04